



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,361	08/17/2001	Gerard Chauvel	TI-31362	4872

23494 7590 06/16/2005

TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER

HASHEM, LISA

ART UNIT	PAPER NUMBER
----------	--------------

2645

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/932,361	Applicant(s) CHAUVEL ET AL	
	Examiner Lisa Hashem	Art Unit 2645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S.

Patent No. 6,000,036 by Durham et al, hereinafter Durham.

Regarding claim 1, Durham discloses a method for controlling an execution of multiple tasks (e.g. operations) in a processing circuit or integrated circuit (Fig. 1, 198) including several processing modules or functional units (see Abstract; Fig. 1; col. 3, lines 17-54), comprising the steps of: determining temperature-associated information at various areas of the processing circuit (col. 3, line 55 - col. 4, line 31); in response to temperature-associated information indicating an excessive temperature at an area associated with a first of said processing modules or first functional unit (Fig. 1, 106), modifying parameters for executing tasks on one or more adjacent processing modules or second function unit (Fig. 1, 108) in order to reduce heat generated by the adjacent processing modules and contributing to the excessive temperature at the first processing module (col. 4, lines 32-61).

Regarding claim 2, the method of claim 1, wherein Durham further discloses said determining step comprises the step of monitoring operations executed by said modules (col. 3, line 55 - col. 4, line 61).

Regarding claim 3, the method of claim 1, wherein Durham further

Art Unit: 2645

discloses said determining step comprises the step of calculating power dissipation information at various locations in said processing circuit (col. 4, lines 32-61).

Regarding claim 4, the method of claim 1, wherein Durham further discloses said determining step comprises the step of calculating a current temperature at various locations in said processing circuit (col. 3, line 55 - col. 4, line 61).

Regarding claim 5, Durham discloses a method for controlling an execution of multiple tasks (e.g. operations) in a processing circuit including a plurality of processing modules or functional units (see Abstract; Fig. 1; col. 3, lines 17-54), comprising the steps of: generating a task allocation scenario for allocating multiple tasks among the plurality of processing modules (col. 1, line 60 – col. 2, line 6); prior to executing the tasks, estimating temperature-associated information for various locations in the processing circuit according to the scenario (col. 3, line 55 - col. 4, line 31); determining whether a temperature threshold would be exceeded by executing the tasks according to the scenario (col. 4, lines 31-61).

Regarding claim 6, the method of claim 5, wherein Durham further discloses said step of generating a task allocation scenario comprises the step of receiving a task list or instruction describing the tasks to be executed and a task model or dispatch unit (Fig. 1, 114) describing the tasks (col. 3, lines 17-31; col. 4, lines 12-31).

Regarding claim 7, the method of claim 6, wherein Durham further discloses the task model includes initial area-specific power dissipation estimates for each task via the power estimator (Fig. 1, 110) (col. 3, line 55 – col. 4, line 61).

Regarding claim 8, Durham discloses a processing circuit (Fig. 1, 198) including a

Art Unit: 2645

plurality of processing modules or functional units for executing multiple tasks (e.g. operations) (see Abstract; Fig. 1) comprising: circuitry for determining temperature-associated information at various areas of the processing circuit (col. 3, line 17 – col. 4, line 31); and circuitry responsive to temperature-associated information indicating an excessive temperature at an area associated with a first of said processing modules or first functional unit (Fig. 1, 106) for modifying parameters for executing tasks on one or more adjacent processing modules or second function unit (Fig. 1, 108) in order to reduce heat generated by the adjacent processing modules and contributing to the excessive temperature at the first processing module (col. 3, lines 32-61).

Regarding claim 9, the processing circuit of claim 8, wherein Durham further discloses said determining circuitry comprises circuitry for monitoring operations executed by said processing modules (col. 3, line 17 – col. 4, line 61).

Regarding claim 10, the processing circuit of claim 8, wherein Durham further discloses said determining circuitry comprises circuitry for calculating power dissipation information at various locations in said processing circuit (col. 3, line 17 – col. 4, line 61).

Regarding claim 11, the processing circuit of claim 8, wherein Durham further discloses said determining circuitry comprises circuitry for calculating a current temperature at various locations in said processing circuit (col. 3, line 17 – col. 4, line 61).

Regarding claim 12, Durham discloses a processing circuit (Fig. 1, 198) comprising: a plurality of processing modules or functional units for executing multiple tasks (e.g. operations) (see Abstract; col. 3, lines 17-54); and circuitry for generating a task allocation scenario for allocating the tasks among the processing modules, estimating temperature-associated information for various locations in the processing circuit, and determining whether a

Art Unit: 2645

temperature threshold would be exceeded if the tasks were to be executed according to the scenario (col. 3, line 55 – col. 4, line 61).

Regarding claim 13, the processing circuit of claim 12, wherein Durham further discloses said circuitry for generating a task allocation scenario comprises circuitry for receiving a task list or instructions describing the tasks to be executed and a task model or dispatch unit (Fig. 1, 114) describing the tasks (col. 3, lines 17-31; col. 4, lines 12-31).

Regarding claim 14, the processing circuit of claim 13, wherein Durham further discloses the task model inherently includes initial area-specific power dissipation estimates for each task via the power estimator (Fig. 1, 110) (col. 3, line 55 – col. 4, line 61).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,718,164 by Korneluk et al, hereinafter Korneluk in view of Durham.

Regarding claim 15, Korneluk discloses a mobile communications device (see Abstract; Fig. 7) comprising: a plurality of processing modules for executing a plurality of tasks (col. 9, lines 43-48; col. 10, lines 23-27); an antenna for receiving and transmitting signals; and receiver/transmitter circuitry coupled to said antenna for sending and receiving audio and data signals (col. 9, line 66 – col. 10, line 13), said receiver/transmitter circuitry including a processing circuit comprising: circuitry for determining temperature-associated information at

Art Unit: 2645

various areas of the processing circuit (col. 10, lines 13-30); and circuitry for executing tasks or data communication on a plurality of processing modules responsive to said temperature-associated information to prevent problems associated with one or more areas exceeding a temperature threshold (col. 9, lines 16-36; col. 10, line 44 – col. 11, line 65).

Korneluk does not disclose circuitry for modifying parameters for executing tasks on one or more adjacent processing modules.

Durham discloses a method for controlling an execution of multiple tasks (e.g. operations) in a processing circuit or integrated circuit (Fig. 1, 198) including several processing modules or functional units (see Abstract; Fig. 1; col. 3, lines 17-54), comprising the steps of: determining temperature-associated information at various areas of the processing circuit (col. 3, line 55 - col. 4, line 31); in response to temperature-associated information indicating an excessive temperature at an area associated with a first of said processing modules or first functional unit (Fig. 1, 106), modifying parameters for executing tasks on one or more adjacent processing modules or second function unit (Fig. 1, 108) in order to reduce heat generated by the adjacent processing modules and contributing to the excessive temperature at the first processing module (col. 4, lines 32-61).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile communication device of Korneluk to include circuitry for modifying parameters for executing tasks on one or more adjacent processing modules as taught by Durham. One of ordinary skill in the art would have been lead to make such a modification since a mobile communication device can include circuitry to control executing tasks on a plurality of processing modules in order to reduce the amount of heat generated.

Response to Arguments

5. Applicant's arguments, see RCE, filed 5-25-2005, with respect to the rejection(s) of claim(s) 1-15 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made. Please see all rejections above.

6. Accordingly, this action is **NON-FINAL**.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- U.S. Patent No. 6,836,849 by Brock et al disclose a method and apparatus for controlling power and performance in a multiprocessing system

8. Any response to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Or faxed to:

(703) 872-9306 (for formal communications intended for entry)

Or call:

(571) 272-2600 (for customer service assistance)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Hashem whose telephone number is (571) 272-7542. The examiner can normally be reached on M-F 8:30-5:30.

Art Unit: 2645

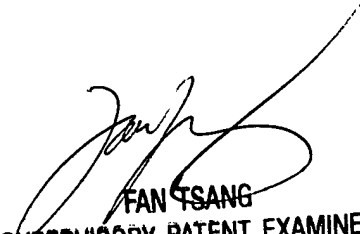
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LH

lh

June 13, 2005


FAN TSANG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600